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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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EXAMINER
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ART UNIT	PAPER NUMBER
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**DATE MAILED:**

**Please find below and/or attached an Office communication concerning this application or proceeding.**

**Commissioner of Patents and Trademarks**

# Office Action Summary

Application No.

09/501,033

Applicant(s)

MESS, LEONARD E

Examiner

VINH P NGUYEN

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 09/12/2000.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-61 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-61 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. & 119(e).

## Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892)
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6
- 18) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other:

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1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-9,17-24,29-30,33-35,37,40-42,44-45,47,49-50,52,54-55,57 and 59-60 are rejected under 35 U.S.C. 102(b) as being anticipated by Lim et al (Pat # 5,530,376).

As to claims 1-9, 17-24,29-30,33-35,37,40-42,44-45,47,49-50,52,54-55,57 and 59-60, Lim et al disclose a carrier for burn-in/testing of non-package die as shown in figure 1,2 and 4 having an interposer and a resilient connector (1-3,4,13) for holding the semiconductor device (6) stationary relative to the interposer. According to Lim et al ,the interposer comprises substrate (12) made of ceramic material, a plurality of electrical conductors (16) with receiving ends (17) projected and disposed within a recess of the substrate (12) , for connecting to a semiconductor device (6).

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 10-16,25,28,31-32,36,38-39,43,46,48,51,53,56 ,58 and 61 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lim et al (Pat # 5,530,376).

Lim et al disclose a reusable carrier as mentioned in paragraph # 4. As to claims 10-11,15,16,31-32, the material for the connector would have been an obvious design choice as long as it can bias and hold the semiconductor device in place properly. As to claims 12,28,38,46,51,56 and 61, it would have been obvious that the semiconductor device would be exposed to the atmosphere for dissipating the heat since the clip is not tightly closed. As to claim 13, it appears that the connector of Lim et al removably connects the semiconductor device to the interposer. As to claim 14, it appears that the connector of Lim et al is a resilient biasing clip. As to claims 25, 36 the material for the substrate such as "Boron Nitride" or "alumina" would have been well known insulated materials in the art. As to claims 39,43,48,53 and 58, it would have been well known for one of ordinary skill in the art to adhesively connect the semiconductor device to the interposer.

5. Claims 26-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lim et al (Pat # 5,530,376) in view of Wood et al (Pat # 5,578,934).

Lim et al disclose a reusable carrier as mentioned in paragraph # 4. As to claims 26-27. Wood et al suggest that it would have been well-known in the art to provide an insulating layer (74) on a portion of the conductor (28C). It would have been obvious for one of ordinary skill in

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the art to provide the teaching of Wood et al to the device of Lim et al so that the conductors (16) are protected from damage.

6. Applicant's arguments filed on 09/12/2000 have been fully considered but they are not persuasive.

Applicant argued that the carrier of Lim et al does not receive thereon a semiconductor device, the carrier is not "a substantially planar sheet" and the die is completely covered or almost fully covered by the heat sink structure. Examiner disagreed with Applicant about these issues.

First of all, the die or semiconductor device (6) is received on the carrier and this carrier is considered as "a substantially planar sheet". The term "substantially planar sheet" is a broad term, it can cover many other items such as the carrier (12) of Lim et al. Secondly, it appears that the connector (1-3,4,13) of Lim et al reference would not be tightly closed, a small part of the die (6) would be exposed to the atmosphere so that the heat dissipation from the die could take place.

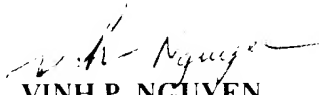
7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to VINH P. NGUYEN whose telephone number is (703) 305-4914.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-4900.

  
**VINH P. NGUYEN**  
**PRIMARY EXAMINER**  
**ART UNIT 2858**

11/08/2000